# Fort a la Corne Diamond Project

Summary of Activities and Work Programs Completed in the Fort a la Corne Area by 101047025 Saskatchewan Ltd on behalf CMKM Diamonds Inc.

Prepared by William Jarvis, Diamond Exploration Consultant April 2005

For

101047025 Saskatchewan Ltd.

Summary

The approach to the exploration of the Fort a la Corne area on behalf of CMKM Diamonds Inc. for diamondiferous kimberlites has followed a logical and systematic program utilizing methods that have been employed effectively elsewhere in the world in similar geological settings. That program, in outline, has consisted of the following steps:-

## Introduction and Terms of Reference

The author has been asked by 101047025 Saskatchewan Ltd to report on and make recommendations for the kimberlite exploration program completed on behalf of CMKM Diamonds Inc. in the Fort a la Corne Project Area, central Saskatchewan.

The scope of work completed included:

a review of the Geological setting as it relates to kimberlite and diamond exploration;

an examination of the geological and geophysical data provided by the company;

a review of published geological reports and maps;

a visit to the area of the concession.

The exploration program carried out accepted a geological model whereby the characteristics of earlier kimberlite discoveries in the area could be utilized. The program complete comprised the following steps:-

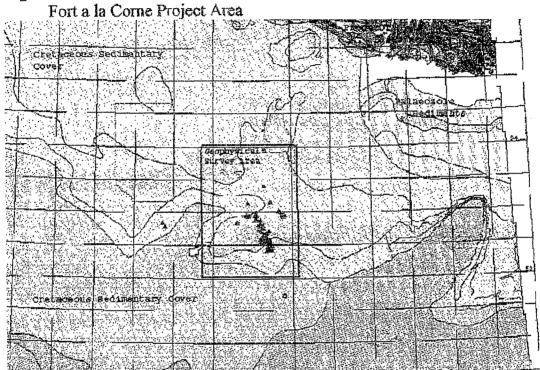
- 1. Geological Assessment
- 2. Mineral Claim Acquisitions
- 3. Airborne Geophysical Surveys
- 4. Evaluation of the Data
- 5. Field Investigations
- 6. Drilling Sampling
- 7. Testing of Discoveries

These are discussed below in more detail.

#### Location

The Fort a la Corne project area is located to the east and northeast of the city of Prince Albert in the Province of Saskatchewan Canada. Figure 1 locates the area of the project on a basic geology map of the central part of the province.

Figure 1:



#### ▲ Kimberlite Occurrence

# Geological Assessment:

The Fort a la Corne Project area is on Craton. There are kimberlites within Project area. In light of reported results some of these are potentially economic.

Recent work has shown the kimberlites to have been emplaced through Cretaceous and older sedimentary rocks into a shallow sea or as volcanic islands. This is an unusual setting for kimberlites, not previously observed. The kimberlites may have been emplaced sub-aerially or intruded into poorly consolidated sediments in a laccolithic or sill-like form.

In the past the kimberlites in the area may have been buried by upper Cretaceous sedimentary rocks. However, the present level of erosion of the Cretaceous sedimentary cover rocks in the Fort a la Corne area is such that, some of the kimberlites were exposed and eroded by glacial action during the last period of glaciation. This distributed kimberlitic indicator minerals and fragments of the kimberlites over a large area and was instrumental in the original discovery of the kimberlites in the area.

The Fort a la Corne Project Area was assessed as having potential to host as yet undiscovered diamond bearing kimberlite pipes.

## Mineral Claim Acquisitions:

The granting of mineral concessions and mining title in Saskatchewan, Canada, is such that it is important to have established a mineral claim to an area prior to the commencement of work programs. Appendix A provides details of the mineral claims in Saskatchewan in which CMKM Diamonds Inc. has acquired an interest. These claims cover a large area overlapping the know kimberlite pipe clusters.

## Airborne Geophysical Surveys:

One of the principal tools leading to the discovery of diamondiferous kimberlites in the Forte a la Corne area has been the use of airborne magnetic surveys. The contrast between the magnetism of the kimberlites and the magnetism of the other rocks in the area means that airborne magnetic surveys can be used to locate them.

The kimberlites are emplaced into essentially non-magnetic Cretaceous sedimentary rocks which are buried under 100 - 150m of recent glacial sediments. The other magnetic rocks in the area are deeply buried Precambrian metamorphic rocks, more than 600m below the present surface. The higher magnetic susceptibility of the kimberlite and their "near-surface" position, buried under only the glacial sediments, can provide an easily recognized magnetic signature which helps in locating them.

Kimberlites can also have other physical characteristic, such as a high density and high electrical conductivity, which differ from those of the rocks into which they are emplaced. Geophysical surveys measuring the local gravity field or electromagnetic fields at various frequencies can be used to locate kimberlites. However both of these methods can be expensive.

101047025 Saskatchewan Ltd. did have a test EM survey completed using the Fugro Input methods but found that method not to be cost effective for the large area of the Fort a la Corne Project.

In 2004 Goldak Airborne Surveys Ltd. of Saskatoon, Saskatchewan, was contracted to complete a tri-axial magnetic gradiometer survey of the Project Area. A total of 52,688 line kilometers were completed at a nominal line spacing of 200m to cover an area of roughly 9236km<sup>2</sup>. Figure 1 locates the area of the survey completed and plots the positions of the known kimberlites.

The products received from the survey comprised a report detailing the parameters of the survey, the digital data record, flight path videos and, plotted at 1:50,000 scale, maps of the total magnetic field; the measured vertical gradient; and enhanced vertical gradient with horizontal vectors.

A copy of the report provided by Goldak Airborne Surveys Ltd. is available on request.

### Examination and Evaluation of the data:

The examination of the geophysical survey data sets for anomalies which could represent undiscovered kimberlite intrusions was completed by geophysicist Phil Robertshaw. The known kimberlites were covered by the survey flown. This provided comparatives as a basis for the interpretation of the survey data when looking for new kimberlites. The vertical gradient plots should allow for recognition of shallow magnetic sources located well above the deep Precambrian basement.

Mr Robertshaw provided a listing 16 magnetic anomalies he selected from the Goldak Survey.

# Field Investigations:

A first pass evaluation of the anomalies selected is made to determine if the anomaly is likely to have a cultural cause; a farm house, a barn or a piece of machinery. The remaining anomalies are prioritized based on several parameters including their likelihood to represent buried kimberlite pipes. Further evaluation of the anomalies is by completing ground magnetic surveys to define the anomalies and if they are determined to be of continuing interest, to locate potential drill bole sites.

Ground surveys allow you to "locate" the anomaly on the ground and to better model the causative body as possibly/probably being (or not being) a shallow intrusive body, — a kimberlite pipe. This work was directed by and completed for 101047025 on behalf of CMKM Diamonds Inc. by Saskatoon based professional geologist Ralph Newson. The results of that work and the assessment of the continuing potential of the anomalies to represent kimberlite pipes are also included on Table 1.

#### Drilling and Sampling:

The overburden in the Forte a la Corne survey area can be more than 200m thick and the only way to definitively test the geophysical anomalies that are still of interest, is by drilling. Permitting and planning of the drilling which was completed within the CMKM Fort a la Corne project area was organized by local geologist Ralph Newson. 15 holes were drilled to test geophysical anomalies and to obtain samples of the Caroline kimberlite pipe. Table 2 reports the UTM coordinates of these drill hole and their locations. Three of the drill holes intersected kimberlite, the Caroline Pipe. Nine intersected only Cretaceous sedimentary cover rock and two failed to reach bedrock principally for mechanical reasons and because of difficulties drilling. The kimberlite intersections in the Caroline pipe were logged and sections of the drill core were split and compiled into samples for analysis.

## Testing of Discoveries:

Kimberlite core intersections from the Caroline Pipe were logged and split by Project Geologist R. Newson and samples totaling 425kg of kimberlite were sent to the mineral processing laboratory at the Saskatchewan Research Council mineral processing laboratory in Saskatoon. The samples were subject to caustic fusion, a process where by most mineral phases are dissolved and diamond, if present, remains in the un-dissolved residue. The results reported by SRC are contained within Table 3. Only 2 micro-diamonds were reported recovered from the Caroline Pipe.

Table 3

Sample #	Sample Wgi (kg)	Macro-diamonds	Micro-diamonds	Weight of diamonds in milligrams
1	46,90	0	0	
2	43.75	0	. 0	
3	38.80	0	0	
4	17.50	0	0	
5	40,10	0	2	0.011
6	41.40	0	. 0	
7	74,30	Û	0	
8	15,40	0	0	
9	17.60	. 0	0	
10	11.35	0	0	
11	24.70	0	0	
12	53.45	0	0	

Where a kimberlite intrusive is discovered it must be sampled and evaluated to determine its potential to be an ore body. The evaluation process is multi-staged but initial sampling should return micro-diamonds or

geochemical evidence of the presence of diamonds in the body. This is normally achieved by testing for the presence of small diamonds less than 1.00mm in size. Publications currently list diamonds >0.5mm as macro-diamonds and those <0.5mm as micro-diamonds. Micro-diamond results are useful in the evaluation of the potential of a kimberlite pipe to host economic diamond deposits. No further work is recommended at this time.

#### Conclusions:

The described program was a logical approach to the exploration of mineral claims in the Fort a la Corne area for kimberlites and diamonds. However in late 2004 it was realized that the program completed was weak in certain aspects. It was realized there was a need to retain the services of staff with extensive experience of kimberlite exploration and evaluation. At the request of Messrs. Urban Cassavant and Emerson Koch, Mr. Bill Jarvis, a diamond exploration consultant with more than 25 years kimberlite exploration and diamond production experience was retained to direct the exploration program.

It was also realized that although the geophysical surveys completed by both Fugro and Goldak were of high quality the evaluation of the data produced was incomplete. At the suggestion of Mr. Jarvis, Geophysical Consultant and Senior Professional Geophysicist H. David MacLean was retained to complete an evaluation of the geophysical data.

#### Recommendations:

If the program is to continue at a substantial scale the services of a geological consultancy group with kimberlite exploration experience such as Watts Griffis and McOuat or MPH Consulting of Toronto should be employed.

It has also been recommended and implemented, to complete the evaluation of the magnetic survey data for kimberlite pipe like responses by contracting the services of geophysicist H. David MacLean. Before drilling more targets the follow-up of the anomalies generate by Mr. MacLean will be by field visit, ground surveys, analysis and a recommendation for drilling should be provided by the geophysicist.

Drilling Summary Table CMKM Diamonds Inc

Hala Pagingsion	Eading	Northing	Dates drilled	Claim #	T.R.S	모	Depth to Bedrack	to Bedrock Bedrock Type
Tions Coallington	F. Contract	4 10 11 12	02V25 - 03/30V04			10320	421ft	Kimberlite
Caronia			PUPULPU - UE/EU			777%	39411	Kimberlite
Carosine 2			COLOR CHICAL			7076	4066	Cretaceous Seds.
Caroline 3			04/26 - 04/30/04	The state of the s		11161	40011	Cloudoude Cour.
Caroline 4			04/30 - 05/03/04			80111	11/48	NI DOLLE
Caroline 5			05/04 - 05/07/04			703ft		1111
M-1 *	500436	5912074	5912074 08/26 - 08/28/05		50 31 34	35411	* Hole abandoned	
M-1 re-drilled	500436	5912074	5812074 08/28 - 08/04/04		50 31 34	8978	1	Cretaceous Seus.
4-2	500848	5911288	5911288 09/15 - 09/18/05		50 31 34/276090	1909	EOH in overburden	
Choiceland 1	532248	5919436	5919436 11/08 - 11/11/04	ADV CO.	51 18 24	6878	43611	Cretaceous Seds.
Choiceland 2	532242	5919483	5919483 11/13 - 11/15/04		51 18 24	54711	410ft	Cretaceous Seds.
Jaqueline Lake 1			01/31 - 02/02/05	8-134419	53 19 10	58211		Cretaceous Seus
Jaqueline Lake 2	30,300		02/06 - 02/09/05	S-134419	53 19 10	637ft	431ft	Cretaceaus Seas.
Smeaton Dump	513063	5930779	5930779 02/21 - 02/24/05		52 19 31	710ft	430ft	Cretaceous Seus.
Hole #			02/27 - 03/08/05	S-137480	53 19 11	517ft	142011	Cretaceous Seus.
Birch Bark Lake 1	493061	5930418	593041603/13 - 93/19/05		52 21 30	11008	4361	Cretaceous Seas.
Birch Bark Lake 2	493024	5930418	5930418 03/19 - 03/23/05		52 21 30	827H	43/11	Cretaceous seus.

This record is a composite from several incomplete sources.

Where a UTM coordinate is provided the drill site was visited.

The Jaquelline Lake and Hole 4 sites could not be accessed at this time.

Coordinates are available for the Caroline Pipe drilling on logs supplied by Mr. R. Newson. These have not been checked.